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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/731,638	12/07/2000	Richard Alan Stanley	99-965	9958

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EXAMINER

MARCELO, MELVIN C

ART UNIT PAPER NUMBER

2663

DATE MAILED: 03/22/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/731,638

Applicant(s)

STANLEY, RICHARD ALAN

Examiner

Melvin Marcelo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 and 18 is/are allowed.
- 6) ☒ Claim(s) 1-7,9-12,14,15,19 and 20 is/are rejected.
- 7) ☒ Claim(s) 8,13 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9-12 and 19-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9, line 9, "said transmission channels" lack a proper antecedent basis in claims 9, 8 or 1.

Claim 19, line 9, "said transmission channels" lack a proper antecedent basis in claims 19 or 17.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Stanley et al. publication ("Cost-Effective Selection of Radio Access Ports in Dense Wireless Systems") dated September 1998.

With respect to the claims, references to the publication appears in parenthesis.

1. A method for selecting one of a plurality of radioport architectures of radioports in a wireless communication network (Stanley publication, page 91, section III. Radioport Cost

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Modeling to page 93), said method comprising: specifying parameters associated with said radioports (Page 91, **channel capacity, power output and physical construction**); computing composite powers for said radioport architectures in response to said parameters (Page 91, **composite power/power per channel**); determining cost structures responsive to said composite powers for said radioport architectures (Page 91, **equation 2 for C rad**); and comparing said cost structures of said radioport architectures to select said one radioport architecture (**Figures 3 and 4, wherein multiple cost structures are plotted and compared**).

2. A method as claimed in claim 1 wherein said comparing operation includes choosing a least-cost one of said radioport architectures to be said one radioport architecture (Page 92, **column 2, last five lines to page 93, column 1, first six lines**).

3. A method as claimed in claim 1 further comprising identifying a cost-optimal coverage area for said radioports in response to said comparing operation (Page 92, **column 2, last five lines to page 93, column 1, first six lines**).

4. A method as claimed in claim 1 further comprising identifying, in response to said comparing operation, a cost-optimal quantity of radioports to support wireless communication in a total service area of said wireless communication network (Page 92, **column 2, last five lines to page 93, column 1, first six lines**).

5. A method as claimed in claim 1 wherein said specifying operation specifies a constant channel capacity constraint, and said cost structures are determined in response to said constant channel capacity constraint (Page 91, **column 1, first full paragraph, "each radioport provides the same traffic capacity..."**).

6. A method as claimed in claim 5 wherein said computing operation comprises: defining a number of transmission channels allocated to each of said radioports, said number being associated with said constant channel capacity constraint (Page 91, **equation 1 "N" number of channels**); varying channel transmission powers for said transmission channels (**Equation 1 "Pch" power per channel**); and calculating said composite powers in response to said number of transmission channels and said varying channel transmission powers (**Equation 1 "Pcomp" maximum radioport composite power**).

7. A method as claimed in claim 6 further comprising: defining coverage areas of said radioports to be circular regions of common radii; and utilizing a propagation model to identify sizes of coverage areas, said sizes varying in response to said varying channel transmission powers (Page 92, **section IV. Radioport Coverage Modeling**).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanley et al. publication ("Cost-Effective Selection of Radio Access Ports in Dense Wireless Systems").

Stanley does not mention a computer-readable storage medium containing executable code for instructing a processor. However, Stanley's invention is a modeling tool (page 93, section V. Summary), wherein a skilled artisan would have been motivated to incorporate the invention into an easily distributable form. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to distribute Stanley's invention as a computer-readable storage medium since a modeling tool such as Stanley's does not require physical radioport components.

14. A computer-readable storage medium containing executable code for instructing a processor to select one of a plurality of radioport architectures of radioports in a wireless communication network (Stanley publication, page 91, section III. Radioport Cost Modeling to page 93), said executable code instructing said processor to perform operations comprising: specifying parameters associated with said radioports, said specifying operation specifying a constant channel capacity constraint (Page 91, column 1, first full paragraph, "each radioport provides the same traffic capacity..."); computing composite powers for said radioport architectures in response to said parameters (Page 91, composite power/power per channel); determining cost structures

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responsive to said composite powers for said radioport architectures, said cost structures being determined in response to said constant channel capacity constraint (Page 91, equation 2 for C rad); and comparing said cost structures of said radioport architectures to choose a least-cost one of said radioport architectures to be said one radioport architecture (Figures 3 and 4, wherein multiple cost structures are plotted and compared, and page 92, column 2, last five lines to page 93, column 1, first six lines).

15. A computer-readable storage medium as claimed in claim 14 wherein said executable code instructs said processor to perform further operations comprising: defining a number of transmission channels allocated to each of said radioports (Page 91, equation 1 "N" number of channels), said number being associated with said constant channel capacity constraint; varying channel transmission powers for said transmission channels (Equation 1 "Pch" power per channel); calculating said composite powers in response to said number of transmission channels and said varying channel transmission powers (Equation 1 "Pcomp" maximum radioport composite power).

Allowable Subject Matter

7. Claims 17 and 18 are allowed.
8. Claims 8,13 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. Claims 9-12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
10. Claims 19 and 20 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

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11. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to anticipate or make obvious the additional features associated with selecting one of a plurality of radioport architectures.

8. A method as claimed in claim 1 wherein said specifying operation specifies a constant offered load constraint, and said cost structures are determined in response to said constant offered load constraint.

9. A method as claimed in claim 8 wherein said computing operation comprises:

- (a) identifying sizes of coverage areas of said radioports;
- (b) determining channel transmission powers for each of said sizes of said coverage areas;
- (c) computing offered load values for said each of said sizes of said coverage areas in response to said constant offered load constraint; and
- (d) determining a number of said transmission channels to support said each of said offered load values, said composite powers being computed in response to said number of transmission channels and said channel transmission powers.

10. A method as claimed in claim 9 wherein: said method further comprises defining said coverage areas to be circular regions of common radii; said specifying operation provides said radii; and said operation (a) computes said coverage areas in response to said provided radii.

11. A method as claimed in claim 9 wherein: said specifying operation provides a quality of service parameter; and said operation (d) comprises approximating said number of transmission channels at each of said offered load values in response to said quality of service parameter.

12. A method as claimed in claim 11 wherein said quality of service parameter is a blocking probability.

13. A method as claimed in claim 1 wherein: said method further comprises: identifying sizes of coverage areas of said radioports, said coverage areas for each of said radioports being circular regions of common radii; and ascertaining a quantity of radioports to support wireless communication in a total service area of said wireless communication network; and said determining operation comprises: applying a cost model to determine costs of one of said radioports responsive to said sizes of said coverage areas; and combining each of said costs with said quantity of

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said radioports to obtain said cost structures of each of said radioport architectures.

16. A computer-readable storage medium as claimed in claim 15 wherein said executable code instructs said processor to perform further operations comprising: utilizing a propagation model to identify sizes of coverage areas of said radioports, said coverage areas for each of said radioports being circular regions of common radii, and said sizes of said coverage areas varying in response to said varying channel transmission powers; for each of said sizes, ascertaining a quantity of radioports to support wireless communication in a total service area of said wireless communication network; applying a cost model to determine costs of one of said radioports responsive to said sizes of said coverage areas; and combining each of said costs with said quantity of said radioports to obtain said cost structures of each of said radioport architectures.

17. A computer-based method for selecting one of a plurality of radioport architectures of radioports in a wireless communication network, said method comprising: specifying parameters associated with said radioports, said specifying operation specifying a constant offered load constraint; identifying sizes of coverage areas of said radioports; ascertaining a quantity of radioports to support wireless communication in a total service area of said wireless communication network in response to said sizes of said coverage areas; computing composite powers for said radioport architectures in response to said parameters; determining cost structures responsive to said composite powers for said radioport architectures, said cost structures being determined in response to said constant offered load constraint, said determining operation including: applying a cost model to determine costs of one of said radioports responsive to said sizes of said coverage areas; and combining each of said costs with said quantity of said radioports to obtain said cost structures of each of said radioport architectures; and comparing said cost structures of said radioport architectures to choose a least-cost one of said radioport architectures to be said one radioport architecture.

18. A computer-based method as claimed in claim 17 wherein: said method further comprises defining said coverage areas to be circular regions of common radii; said specifying operation provides said radii; and said identifying operation computes said sizes of said coverage areas in response to said provided radii.

19. A computer-based method as claimed in claim 17 wherein said computing operation comprises:

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(a) determining channel transmission powers for each of said sizes of said coverage areas;
(b) computing offered load values for said each of said sizes of said coverage areas in response to said constant offered load constraint;

(c) for said each offered load value, determining a number of said transmission channels to support said each offered load value, said composite powers being computed in response to said number of transmission channels and said channel transmission powers.

20. A computer-based method as claimed in claim 19 wherein: said specifying operation provides a blocking probability parameter; and said operation (c) comprises approximating said number of transmission channels at each of said offered load values in response to said blocking probability parameter.

Conclusion

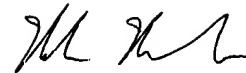
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin Marcelo whose telephone number is 703-305-4373. The examiner can normally be reached on Monday-Friday, 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 703-308-5340. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Melvin Marcelo', written in a cursive style.

Melvin Marcelo
Primary Examiner
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Mm
March 20, 2004